

CLAIMS

1. A fuel cell system comprising:

a fuel cell which generates electric power from a fuel gas and an oxidizing agent gas;

a fuel gas supplying means which supplies the said fuel gas into the said fuel cell on the anode side thereof;

an oxidizing agent gas supplying means which supplies the said oxidizing agent gas into the said fuel cell on the cathode side thereof;

a raw material gas supplying means which supplies a gas of raw material of the said fuel gas into the said fuel cell; and

a control means which controls the said fuel gas supplying means, the said oxidizing agent gas supplying means and the said raw material gas supporting means, wherein the said control means controls during the starting of electricity generation of the said fuel cell such that the said raw material gas supplying means purges the said fuel cell at least on the cathode side thereof with the said raw material gas before the said oxidizing agent gas supplying means and the said fuel gas supplying means supply the said fuel gas and the said oxidizing agent gas into the said fuel cell, respectively.

2. The fuel cell system according to Claim 1, wherein the said raw material gas supplying means purges the interior

of the said fuel cell on the anode side thereof after purging on the said cathode side thereof.

3. The fuel cell system according to Claim 1 or 2, comprising:

a fuel gas pipe disposed between the said fuel gas supplying means and the said fuel cell battery on the cathode side thereof;

a fuel gas on-off valve disposed along the said fuel gas pipe;

an oxidizing agent gas pipe disposed between the said oxidizing agent gas supplying means and the said fuel cell on the anode side thereof;

an oxidizing agent gas on-off valve disposed along the said oxidizing agent gas pipe;

a raw material gas pipe connected to the said raw material gas supplying means and a part of the said oxidizing agent gas pipe disposed between the said oxidizing agent gas on-off valve and the said fuel cell on the cathode side thereof; and

a raw material gas on-off valve disposed along the said raw material gas pipe.

4. The fuel cell system according to Claim 3, wherein a cathode side exhaust pipe through which an off-gas discharged from the said fuel cell on the cathode side thereof is discharged and a cathode side off-gas on-off valve disposed

along the said cathode side exhaust pipe and the said purge is carried out by opening the said cathode side off-gas on-off valve, opening the said raw material gas on-off valve for a predetermined period of time and then closing the said raw material gas on-off valve.

5. The fuel cell system according to Claim 4, wherein there are provided an additional raw material gas pipe connected to the said raw material gas supplying means and a part of the said raw material gas pipe disposed between the said fuel gas on-off valve and the said fuel cell on the anode side thereof, an additional raw material gas on-off valve disposed along the said additional raw material gas pipe, an anode side exhaust pipe through which an off-gas discharged from the said fuel cell on the anode side thereof is discharged and an anode side off-gas on-off valve disposed along the said anode side exhaust pipe and the said purge is carried out by opening the said raw material gas on-off valve, opening the said anode side off-gas on-off valve, and then opening the said additional raw material gas on-off valve for a predetermined period of time.

6. The fuel cell system according to Claim 5, wherein the operation of the said oxidizing agent gas supplying means and the said fuel gas supplying means of supplying the said fuel gas and the said oxidizing agent gas into the said fuel cell is carried out by opening the said anode side off-gas

on-off valve, opening the said fuel gas on-off valve, opening the said cathode side off-gas on-off valve, and then opening the said oxidizing agent gas on-off valve.

7. A method of starting a fuel cell system comprising a fuel cell which generates electric power from a fuel gas and an oxidizing agent gas, an oxidizing agent gas supplying means which supplies an oxidizing agent gas into the said fuel cell and a fuel supplying means which supplies the said fuel gas into the said fuel cell, wherein the said fuel cell at least on the cathode side thereof is purged with a raw material gas to be used in the production of the said fuel gas before the said fuel gas and the said oxidizing agent gas are supplied into the said fuel cell during the starting of electricity generation of the said fuel cell.

8. The method of starting a fuel cell system according to Claim 7, wherein the interior of the said fuel cell on the said anode side thereof is purged after purging on the said cathode side thereof.

9. A program of computer-controlling a step of purging the said fuel cell at least on the cathode side thereof with a raw material gas to be used in the production of the said fuel gas before the said fuel gas and the said oxidizing agent gas are supplied into the said fuel cell during the starting of electricity generation of the said fuel cell in the method of starting a fuel cell system according to Claim 7.

10. A recording medium carrying a program according to
Claim 9 which can be processed by a computer.